



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

certainly does not breed contempt, does not dull our awe at the mightiness of the universe in which we play so small a part. It is very doubtful if any of those who are seriously studying the heavens ever lose their feeling of reverence for this supremely wonderful universe and for Whoever or Whatever must be behind it all.

PLANETARY PHENOMENA FOR MAY AND JUNE, 1917.

BY MALCOLM McNEILL.

PHASES OF THE MOON, PACIFIC TIME.

Full Moon...	May 6, 6 ^h 43 ^m P.M.	Full Moon..	June 5, 5 ^h 7 ^m A.M.
Last Quarter.	" 13, 5 48 P.M.	Last Quarter "	" 11, 10 38 P.M.
New Moon...	" 20, 4 47 P.M.	New Moon. "	" 19, 5 2 A.M.
First Quarter.	" 28, 3 33 P.M.	First Quarter "	" 27, 8 8 A.M.

The third eclipse of the year is a *partial eclipse of the Sun* on June 19. It can be seen from no part of the United States except the extreme Northwest in the early morning. The maximum obscuration is less than one-half of the Sun's diameter. As seen in the United States the obscuration is only a small fraction of this. The principal regions of visibility lie in the North Arctic zone.

The summer solstice occurs June 21, 4^h 14^m Pacific Time, and the Sun reverses its northerly motion, beginning to move southward.

May and June, 1917, give rather a poor opportunity for observation of the planets since all of the conspicuous ones except *Saturn* are very near the Sun. There are a number of close and interesting conjunctions, but only a few of them can be observed.

Mercury is an evening star at the beginning of May setting more than an hour and one-half after sunset, and under good weather conditions may be seen in the evening twilight during the first few days of the month; but its distance from the Sun lessens rapidly and inferior conjunction is passed on May 16, the planet then becoming a morning star. It will remain such until July 12. Spring and summer observations of *Mercury* as a morning object are not usually easy as the planet

is then generally a considerable distance south of the Sun, and this diminishes the interval between the risings of the two bodies; but from June 10 to the end of the month the planet will rise an hour or more before sunrise, and may be seen in the early morning twilight. It reaches greatest west elongation $23^{\circ} 32'$ on June 11. This distance from the Sun is greater than the average, as the planet was in aphelion late in May. *Mercury* is in *Taurus* during most of this period moving westward from May 6 to May 28 and then moves eastward. On June 21 it passes about 3° north of the first magnitude red star *Aldebaran, a Tauri*. It is in close conjunction with *Venus* on May 13 but too near the Sun to be seen. After inferior conjunction with the Sun on May 16 it is in conjunction twice with *Mars* on June 5 and June 11, and twice with *Jupiter* on May 24 and June 8. Possibly the second conjunctions with *Mars* and *Jupiter* may be seen. *Mercury* will be about 3° south of both *Mars* and *Jupiter* at these conjunctions.

Venus passed superior conjunction with the Sun on April 26 and will be an evening star for the rest of the year, but does not get far enough away from the Sun to be at all conspicuous for some weeks. The interval between the settings of the Sun and planet is less than one hour until after June 1 and at the end of June is only about one hour and ten minutes. However, the brightness of the planet will permit visibility during a considerable part of the month.

Mars is a morning star too near the Sun for visibility on May 1, rising only half an hour before sunrise, but the interval increases to about an hour by June 1 and to nearly two hours by the end of the month. It will not begin to increase very much in brightness for some time, but will be a little brighter than the pole star and can probably be seen in the early morning twilight during the greater part of June. During the two months period it moves about 44° eastward and 12° northward through *Aries* into *Taurus*, and at the end of June is near the first magnitude red star *Aldebaran, a Tauri*, passing on June 28 about 5° north of the star. Its conjunctions with *Mercury* on June 5 and 11 have already been noted, and on June 8 it will be in conjunction with *Jupiter* passing that planet $0^{\circ} 41'$

to the north, a distance not much greater than the Moon's diameter.

Jupiter is in conjunction with the Sun on the morning of May 9 changing from an evening to a morning star. The much more rapid eastward motion of the Sun causes a comparatively rapid separation of the two bodies so that by the end of the month it rises about an hour before sunrise and its great brightness makes it an easy object. At the end of June it rises very shortly after 2 A. M. It moves about 14° eastward and 4° northward from *Aries* into *Taurus*, and near the end of June passes about 4° south of the *Pleiades* group.

Saturn is the only one of the conspicuous planets in good position for evening observation. On May 1 it does not set until about half an hour after midnight, and at the end of June it remains above the horizon until nearly nine o'clock. As it is not much brighter than a first magnitude star it will not be an easy object more than a few days in July. It moves about 6° eastward and 1° southward from the western part of *Gemini* into *Cancer*. It is still in the vicinity of *Castor* and *Pollux*, the brightest stars in *Gemini*, south and east of the stars about twice the distance from the nearer one that they are apart. The minor axis of the rings grows a little smaller, being a little more than one-third of the major axis as seen in a telescope.

Uranus on May 1 rises shortly before 2 A. M. and on June 30 a little after 10 P. M. As it is not much brighter than the faintest stars which can be seen by the naked eye even when well above the horizon, it can not be identified without a telescope until about two hours above the horizon, but is moving toward a position of comparatively easy visibility. It is in the constellation *Capricornus*, moves eastward until May 29 and then retrogrades, moves westward, but the motion is less than the Moon's apparent diameter. For some years there have been no fairly bright stars near by which the planet may be easily identified; but during the coming summer it will be near the third magnitude δ *Capricorni* and the fourth magnitude γ *Capricorni*. On May 1 it is about $22'$ east and 2° north of δ the brighter and left-hand one of the two stars. The easterly distance increases during May, and then diminishes

to about 15' during June. The distance between the stars is about 2°.

Neptune is in the western sky in the evening in the constellation *Cancer*. *Saturn* is in the same neighborhood west of *Neptune* and gradually drawing nearer, the distance apart of the planets being about 3° at the end of June.

HELIOCENTRIC POSITIONS. OF *VESTA* AND COMET *b* (WOLF) 1916, AT TIME OF NEAREST APPROACH, NOVEMBER 4-5, 1917.

By FRANK E. SEAGRAVE.

Comet (Wolf) 1916 *b*, and the Asteroid *Vesta*. 1917
November 4.

<i>Comet</i>		<i>Vesta</i>	
$\lambda =$	11° 23' 2"	$\lambda =$	12° 17' 55"
$\beta =$	- 3 52 25	$\beta =$	- 7 8 1
Log $r =$	0.39154	Log $r =$	0.39056

Distance between the two = 0.144 of an astronomical unit.

Comet nearest Sun	=	June 16.51	1917
Comet nearest Earth	=	Aug. 21.	1917
Comet in opposition	=	Sept. 16.	1917
<i>Vesta</i> in opposition	=	Sept. 30.	1917

Nearest approach of Comet and *Vesta* = Nov. 4-5. 1917

EPHEMERIS OF COMET *b* (WOLF) 1916 FOR THE MONTH OF JUNE, 1917.

By FRANK E. SEAGRAVE.

1917	α	δ	Log r	Log Δ
June 2	21 ^h 49 ^m 39 ^s	+20° 42' 33"	0.22946	0.11396
" 6	21 58 37	+21 29 59	0.22820	0.10591
" 10	22 7 21	+22 13 5	0.22734	0.09798
" 14	22 15 53	+22 51 15	0.22692	0.09023
" 18	22 24 9	+23 24 35	0.22693	0.08248
" 22	22 32 7	+23 52 0	0.22736	0.07498
" 26	22 39 45	+24 13 37	0.22820	0.06754
" 30	22 46 41	+24 30 3	0.22947	0.05988